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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/502,133	02/11/2000	Harold E. Helson	103544.127	4787

7590

01/24/2006

Jason A. Reyes
Hale and Dorr LLP
60 State Street
Boston, MA 02109

EXAMINER

JONES, HUGH M

ART UNIT

PAPER NUMBER

2128

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/502,133

Applicant(s)

HELSON, HAROLD E.

Examiner

Hugh Jones

Art Unit

2128

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 5, 9 and 13-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9, 13-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1, 5, 9, 13-27 of U. S. Patent 09/502,133 are in front of the office for consideration and remain pending.

Specification

2. The disclosure is objected to because of the following: The background of the invention is deficient. The section merely discloses a few well known chemical structures. There is no mention of the extensive work on connection tables as well as chemical symmetry. Most importantly, Applicants have not indicated any problems in the prior art which they are attempting to solve. It is therefore not clear which problem Applicants are trying to solve. It is noted that the inventor has written review papers in the claimed subject area and is therefore aware of the teachings in the art. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 5, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Hu et al. or Shelley et al.) in view of Fan et al..**

5. Hu et al. disclose computer perception of topological symmetry from a connection table (see abstract).
6. Shelley et al. also disclose computer perception of topological symmetry from a connection table (see pg. 247).
7. Hu et al. or Shelley et al. do not expressly disclose representing the instance of symmetry as a list of equivalent atoms and bonds.
8. Fan et al. disclose detection of constitutionally equivalent atoms from a connection table.
9. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the base teaching with the secondary teaching because Fan et al. disclose displaying the inherent equivalent atomic structures and its benefit, namely that disclosed in paragraphs 1-2 (introduction) col. 1, page 654.
10. **Claims 13-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Hu et al. or Shelley et al.) in view of Fan et al. and in further view of (Chem 3D [of record] and Razinger et al. [of record]).**
11. Hu et al. or Shelley et al. do not expressly disclose all *examples* of symmetry operations.
12. Chem3D discloses symmetry operations and properties and their manipulation in molecular modeling and analysis (chapters 4-5).
13. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the base teaching with the secondary teaching because Razinger et al. expressly discloses the importance of studying the various symmetries (first two

paragraphs, col. 1, page 197) carrying out and representing various chemical symmetry operations (chapter 4-5) when modeling and analyzing chemical structures.

Response to Arguments

12. Applicant's arguments filed 8/12/2005 have been fully considered but they are moot in view of the amendment and new grounds of rejection. However, it is noted that one of Applicant's arguments in the Pre-Appeal Brief Request for Review was that the prior art did not teach perceiving symmetry from connection tables. Hu et al. disclose computer perception of topological symmetry from a connection table (see abstract). Shelley et al. disclose computer perception of topological symmetry from a connection table (see pg. 247).

13. Any inquiry concerning this communication or earlier communications from the examiner should be:

directed to: Dr. Hugh Jones telephone number (571) 272-3781,

Monday-Thursday 0830 to 0700 ET,

or

the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051 (for formal communications intended for entry)

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or (703) 308-1396 (for informal or draft communications, please label *PROPOSED* or *DRAFT*).

Dr. Hugh Jones

Primary Patent Examiner

January 21, 2006

HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER